A7000-1

REAL ESTATE

Vol. 3, No. 10

OUTLOOK

October 1990

A Monthly Forecast for the Economy and Real Estate

FORECAST SUMMARY

- Evidence continues to accumulate that the U.S. economy has fallen into a recession. While the verdict remains in doubt, analysts are becoming less concerned about whether a recession will occur and more concerned with how long and how deep it will be. One prominent sign of weakness was the government's revision in late September of real GNP growth during the second quarter. The growth rate was cut from a slow 1.2 percent to a meager 0.4 percent.
- The current NAR forecast calls for a mild recession beginning in the fourth quarter of 1990. A modest recovery will have begun by the third quarter of 1991. The economy is expected to record a 0.8 percent growth rate for 1990 and show virtually no growth in 1991. With a recovery well under way, the economy will expand 3.0 percent during 1992. These rates compare to a 3.9 percent average for economic growth between 1982 and 1989.
- The housing slump continued in August, as housing starts fell for the eleventh time in the past thirteen months. The annual rate for August was 1,127,000 units, the lowest level since the end of the last recession in October 1982. The figure was 14.9 percent below the August 1989 start rate. Housing starts are expected to reach bottom during the fourth quarter of 1990, when the rate of starts is projected at 1,105,000 units.
- The rate of new homes sold declined 1.4 percent in August and stood at only three-quarters of August 1989's rate. This marks the ninth month in the past year that the sales rate has fallen. Sales of existing homes put together back-to-back monthly sales gains for the first time in almost a year when its July rate grew 3.3 percent.
- While the housing market is in a slump, it isn't moribund. Both the Northeast and the South reversed decreases in the existing homes sales rate in July by picking up 14.3 percent and 6.9 percent, respectively. The South's 1,400,000-unit annual rate during July was stronger than the region's annual rates in both 1988 and 1989. The West, however, was about 16 percent off in July from its 1989 performance.

IN THIS ISSUE

- [illegible]
- [illegible]
- [illegible]
- [illegible]

NATIONAL ASSOCIATION OF REALTORS®

REALTOR® - *The Voice for Real Estate*™

Forecasting & Policy Analysis Division
NATIONAL ASSOCIATION OF REALTORS®
777 14th Street, NW Washington, D.C. 20005

Copyright 1990 NATIONAL ASSOCIATION OF REALTORS®

Due to a change in our publication deadlines, no new data has been made available for existing home sales or home prices (pages 6 and 7) since the publication of the September *Real Estate Outlook*. August data for these series will appear in the next issue.

I've Fallen . . . . And I Can't Get Up!

by John A. Tuccillo
Chief Economist
and Senior Vice President
Real Estate Finance

This year marks the tenth anniversary of the death of John Lennon; this month marks the 50th anniversary of his birth (as an aside, it also contains the birthday of Groucho Marx and the anniversary of the Bolshevik revolution -- making October the grand month of Marxist-Lennonism). The celebration of these events revolve (no pun intended) around Lennon's song-tribute to peace and anarchy, "Imagine." Were he alive, John could probably field an "Imagine" party ticket next month and win a bunch of Congressional seats. As in, "Imagine we have a budget process," or "Imagine there's no Congress."

The latter takes little imagination because the events of early October resembled nothing so much as the collapse of a parliamentary democracy in Italy or pre-Gaullist France. Only our Constitution and the fact that we speak a version of English masked the fact that we had the kind of government chaos that we used to laugh at regularly some decades ago. Now, politics may be a fun game, but not when it gets in the way of the essential business of governing.

We as a nation need a real cut in the federal budget deficit by a significant amount as soon as possible. The amount in the original budget summit proposal -- $500 billion over five years -- is about the right magnitude. Why do we need the cut? Basically for four reasons:

1. The immense cost of the S&L rescue means that the budget deficit will balloon quite apart from any "normal" deficit spending. Add to this the growing bill for interest on the national debt and automatic increases in entitlement programs because of a growing elderly population, and effectively all wiggle room in the budget disappears. Without a significant change in the course of the budget now, it will spin out of control with disastrous economic consequences.

2. In the long run, we are faced with a challenge of investing in America, in investing in the capital equipment, infrastructure and educational development necessary to maintain our position as a first-rank economic power. That can be done only through increased savings. If we throw away our savings in the sterile pastime of paying for excess government, we will assuredly see our economy sink slowly in the West (and the East).

3. The economy is suffering through a liquidity deprivation that has devastated real estate and is eating away at other key sectors. Reports from around the country confirm the fact that there is virtually no credit available from traditional financing sources for investment real estate. Yet, as long as the federal budget runs deep red, the Fed cannot move to relax its monetary controls and allow credit-dependent industries to expand. The inability to cut the deficit on the part of the public sector is having significantly depressing effects on private enterprise.

4. We are in danger of losing our most dependable source of capital, foreigners. As we spent our way through the lost decade that was the Eighties, we got hooked on foreign funds with no less ferocity than if it were crack. And we paid cheaply for the supply, as long as we were perceived of as the "safe harbor" where political stability could always be assured. The current crisis has cracked that credibility, and sown in the minds of our benefactors the thought that perhaps we will never truly face our own profligacy. Adding to the problem is the plummeting Japanese stock market, causing a withdrawal of Japanese funds from U.S. investment markets.

Each of these reasons focuses on the long-term future of the United States economy. But because of the nature of our system, we define "future" with reference to the political cycle; in part, that's the source of the current budget process mess -- it falls right before a general election. In the minds of our competitors throughout the world, the future means 10, 20 or even 50 years.

The process by which we are to rebuild our industrial capital, restore our roads and bridges, and educate our workers to be skilled in an economy where (as Alvin Toffler puts it) wealth is created by the flow of information will not occur in an instant-gratification, made-for-TV-movie time frame. It takes planning that spans years, not months.

But the need for deficit reduction also concerns our rank as an economic power in a rapidly shrinking world. The Middle East crisis has taken the spotlight from the unification of Europe, an event that will ultimately have a greater impact on our economy than anything Saddam can do. The U.S. is like the New York Yankees -- once untouchable, and now challenged on all sides by peers to rise to their level or drop to a lower league.

The budget mess has set back this process immensely. To the Japanese, who operate in an economy which is centrally directed to long-term goals, the sight of a squabbling Congress and an indecisive president surrounded by bullying aides is like watching some bad remake of *Godzilla*. In short, the reputation of the United States as the "safe harbor" has been weakened. The weakness will be seen in more downward pressure on the value of the dollar, higher interest rates, declining foreign investment, and decreased leverage in trade negotiations. And in the long run, none of these is good for our economic growth.

There's a cable TV cult commercial that fits well here. It's an ad for a portable alert system designed to keep senior citizens and the infirm in touch with potential rescuers. The elderly woman tumbles down the stairs, hits her alert button and utters the soon to be immortal, "I've fallen. . . . and I can't get up!" Let's hope we as a nation can.

Outlook for the Economy and Real Estate

Evidence continues to accumulate that the U.S. economy has fallen into a recession. While the verdict remains in doubt, analysts are becoming less concerned about whether a recession will occur and more concerned with how long and how deep the recession will be. The NAR forecast calls for a relatively mild recession begininng in the fourth quarter of 1990. Growth is projected to return by the end of 1991, and 1992 is expected to be a year of solid recovery and milder inflation rates.

The forecast continues to assume that war does not break out in the Persian Gulf. While spot prices have topped $40 per barrel, the contract price of imported oil is assumed to reach $29 by the second quarter of 1991 before falling back to $26 in 1992. Contract prices in June were about $15.

The Expansion Fizzles Out

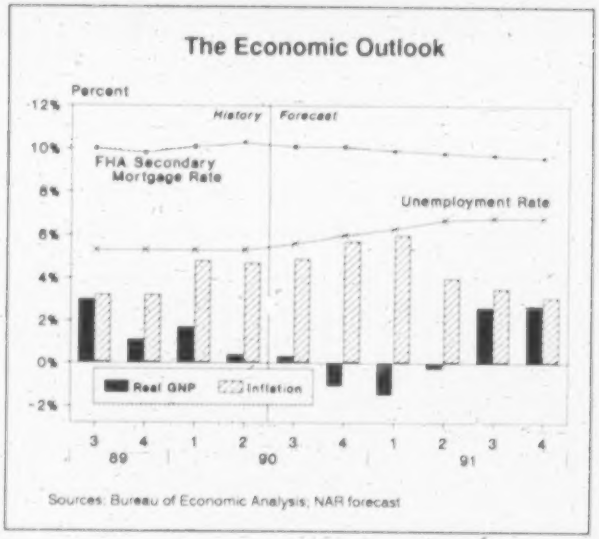
The economic expansion which began in late 1982 appears to be at an end. The annual GNP growth rate in the second quarter of 1990 measured only 0.4 percent, sharply lower than the first quarter's 1.7 percent rate and only a tenth of the expansion's average annual rate. While the NAR forecast calls for only modest 0.3 percent growth in the third quarter, many analysts believe that the reading will fall below zero. The preliminary estimate of growth for the third quarter will be released on October 30 (and revised twice by year end).

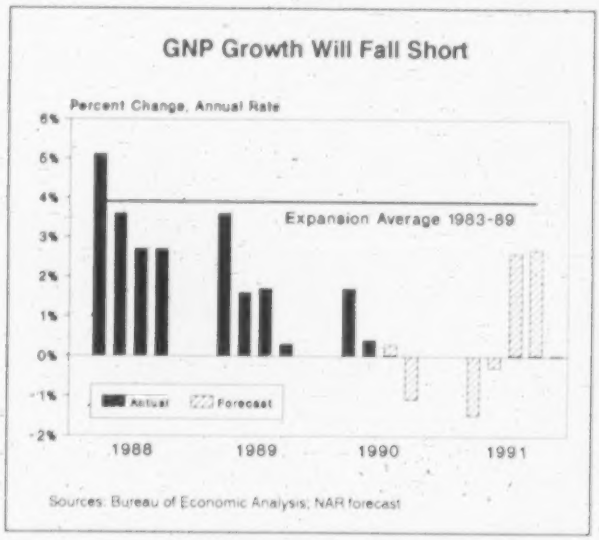
The labor markets are showing signs of strain. The unemployment rate has drifted up nearly a half-percentage point to 5.7 percent since June, and payroll employment fell in September for the third consecutive month. Manufacturing payrolls have lost 520,000 workers since early 1989, with almost a quarter of the loss coming in the past two months.

Other signs of economic softness abound. The Conference Board's index of help-wanted advertising fell to its lowest level in six years. The Dow Jones Industrial Average has dropped almost 20 percent since July, as has the broader S&P 500. An index of manufacturing activity maintained by the National Association of Purchasing Managers fell in September to its lowest level in nearly eight years. Another eight-year low was reached by the University of Michigan's consumer confidence poll. And consumer credit through the first eight months of 1990 grew at only a third the monthly rate set in 1988 and 1989.

Bright spots among the gathering gloom include domestic auto sales, which posted a stronger rate in September than the year-to-date monthly average. Also, inventories remain lean. Not only has the inventory-to-sales ratio remained low, but it has remained virtually unchanged over the past few months. Inventories typically rise as a recession hits, and production is consequently slashed as producers sell out of their stocks. The current inventory position suggests that production cutbacks may not play its usual role of sharply aggravating the downturn.

Although it comprises less than 10 percent of the economy, exports may be a source of strength. Factories now export a fifth of their output, and the falling dollar will boost this figure over the coming year. This will be mitigated by slackening demand for U.S. exports as foreign economies slow in the wake of the oil shock.





How Long? How Deep?

Discerning the dimensions of the alleged downturn is tricky. As projected, this recession is shorter and less severe than the typical recession since World War II. The 1990-91 recession is expected to last three quarters while contracting at an average annual rate of 1.0 percent. On average, the seven postwar recessions have a duration of just under a year and have recorded a 2.7 percent annual rate of contraction. But there are many wildcards at play that could prolong the slump, especially the Gulf crisis, the fragility of the banking system, and the government's fiscal and monetary policies.

Another area of concern are balance sheets. Assets such as real estate, Third World loans, and junk bonds have lost value, and as a result many banks, thrifts and corporations have rickety financial structures. Similarily, many homeowners are finding that their houses are worth less than they had previously thought. The fall in the stock market furthers the loss of wealth from the nation's balance sheets. Less confident about new spending and strained by high debt, both consumers and businesses could cut back severely and make the recession deeper.

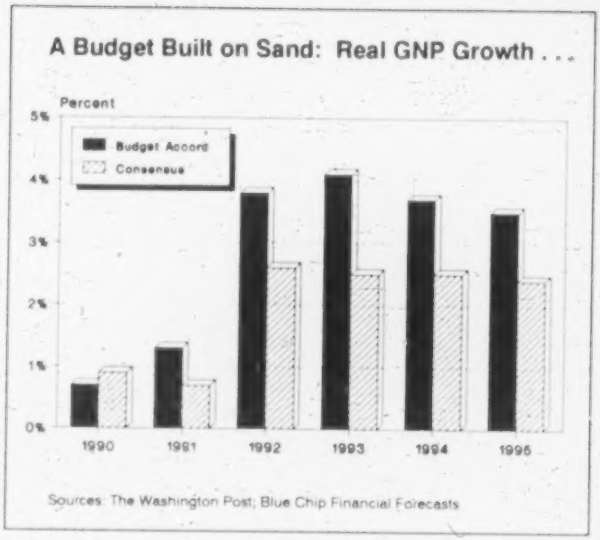
The Budget Numbers Game

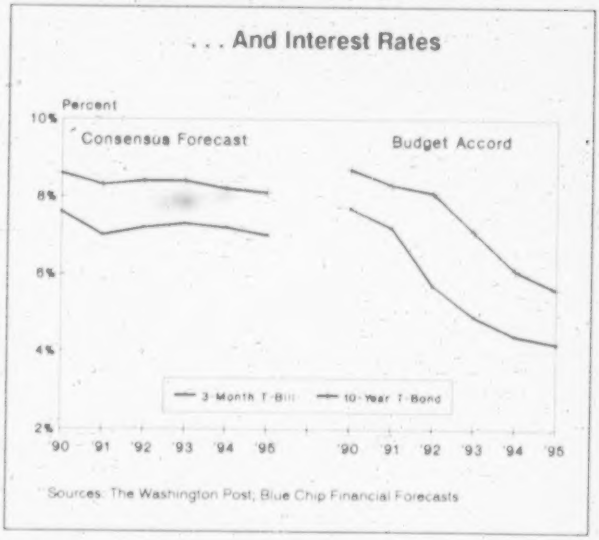
The forecast assumes passage of a five-year budget agreement closely resembling the September 30 budget accord, which was rejected by Congress in early October. If the new deficit-cutting plan uses the same optimistic economic assumptions, however, the projected budget savings will almost certainly fall short. The graph to the right shows the budget negotiators' GNP growth assumptions relative to the consensus forecast, as determined by the 47 forecasters on the panel of the Blue Chip Financial Forecasts. More striking are the differences in interest rate assumptions. The budget accord assumes interest rates will fall sharply, particularly in 1992, so that yields on 10-year Treasury bonds fall below 6 percent. This steep drop in rates is crucial to the budget plan, since more than one-eighth of the projected $500 billion cut in the deficit was due to come from savings on lower interest payments.

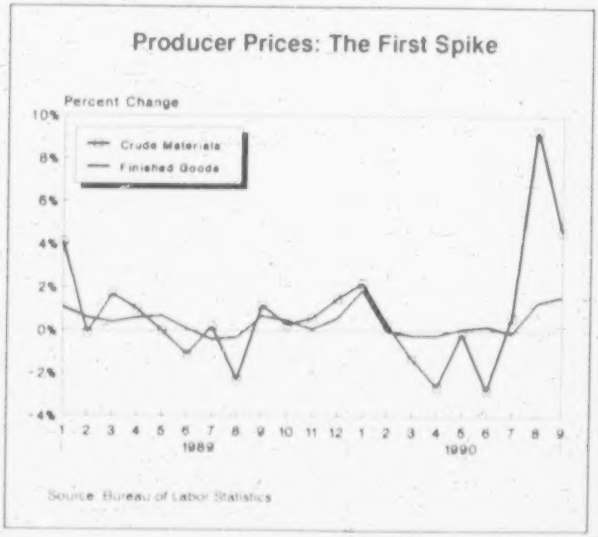
Limited Policy Options for the Fed

The inability of the federal government to pass a budget for the fiscal year which started October 1 is contributing to international economic anxiety. The Japanese stock market has tumbled in recent months, and the dollar fell throughout the third quarter, indicating the increasing reluctance of foreign investors to send their funds to the U.S. To keep the capital flow coming to fund our budget deficit, U.S. interest rates need to stay higher than rates overseas, which have been rising. Like the uncertainty over fiscal policy, this ties the hands of Federal Reserve Chairman Alan Greenspan and keeps rates higher than they would be otherwise.

Despite Administration pressure to ease sooner, Greenspan has promised easier monetary policy only after passage of a "credible and sustainable" budget package. The beneficial effects of lower rates may take six months to a year to make a difference in the economy. The Fed is resisting an easier policy for now in fear that it may help fuel inflation and drive the dollar down still further.







Housing Starts

(Seasonally Adjusted Annual Rates, in Thousands)

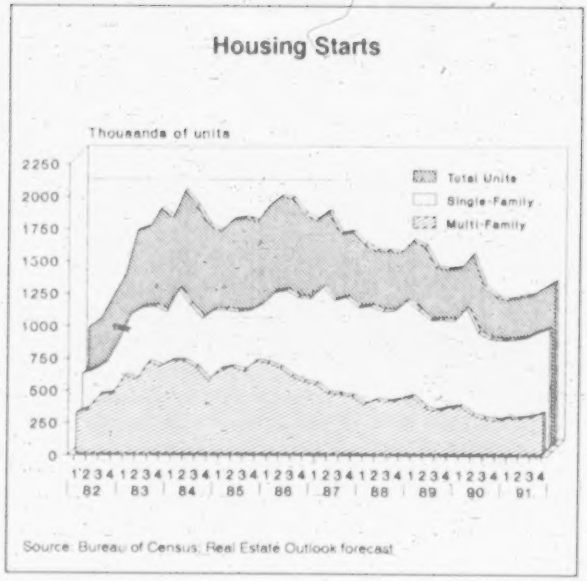
National Data

	Total	SF	2-4	5+
Aug 1989	1,325	987	54	284
Apr 1990	1,216	898	53	265
May 1990	1,206	897	36	273
Jun 1990	1,189	889	42	258
Jul 1990	1,147	868	30	249
Aug 1990	***1,127***	***840***	***32***	***255***
Annual Averages:				
1988	1,488	1,081	59	348
1989	1,376	1,003	55	318
Percent Changes in August 1990 since:				
Aug 1989	-14.9	-14.9	-40.7	-10.2
Jul 1990	-1.7	-3.2	6.7	2.4

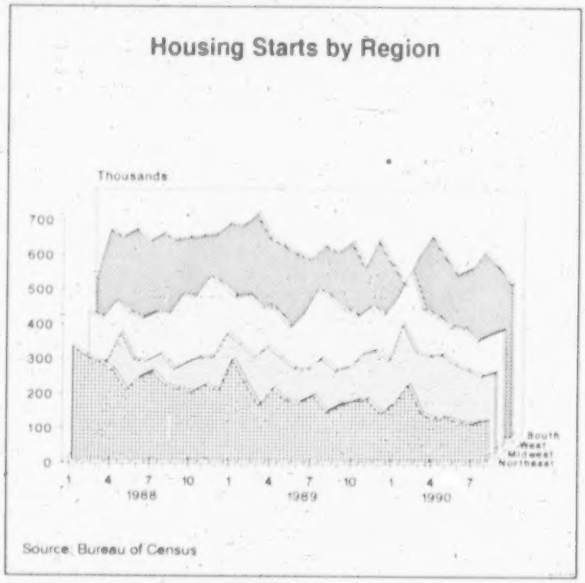
Regional Data

	Northeast	Midwest	South	West
Aug 1989	140	236	559	390
Apr 1990	124	284	469	339
May 1990	127	256	487	336
Jun 1990	113	241	535	300
Jul 1990	110	223	494	320
Aug 1990	***119***	***234***	***441***	***333***
Annual Averages:				
1988	243	274	574	405
1989	184	272	537	396
Percent Changes in August 1990 since:				
Aug 1989	-15.0	-0.8	-21.1	-14.6
Jul 1990	8.2	4.9	-10.7	4.1

Source: Bureau of the Census; Construction Reports, Series C20



Source: Bureau of Census; Real Estate Outlook forecast



Source: Bureau of Census

The housing slump continued in August, as housing starts fell for the eleventh time in the past thirteen months. The annual rate for August was 1,127,000 units, the lowest level since the end of the last recession in October 1982 and 14.9 percent below the August 1989 figure. The third quarter is now expected to show a 6.3 percent decline from the second quarter.

Housing starts are projected to reach bottom in the fourth quarter of 1990 at a 1,105,000 annual rate. Slightly lower interest rates, largely a result of the slumping economy, should give a modest boost to housing starts during 1991. By the fourth quarter of 1991, starts should be at a 1,248,000-unit pace, and economic recovery in 1992 is expected to spur housing starts to 1,305,000 units.

Multi-family units continue to bear the brunt of the decline in housing starts. In August, multi-family units were started at a 287,000-unit annual rate, 23 percent below 1989's pace. The current NAR forecast calls for multi-families to reach its nadir in the fourth quarter of 1990 with a 267,000-unit rate. This would place multi-families below the low point reached during the last recession.

During August, all four regions remained below their rates for housing starts of one year ago, although the Midwest's decline was by less than one percent. The remaining three regions recorded double-digit declines. Relative to July, three of the four regions posted increases; the South fell by almost 11 percent.

New Home Sales

(Seasonally Adjusted Annual Rates, in Thousands)

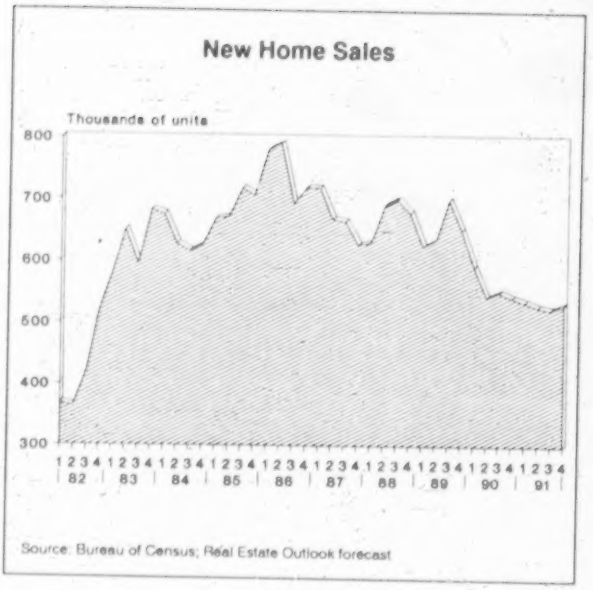
National Data

		Mo. Ago % Chg.	Yr. Ago % Chg.
Aug 1989	719	-3.0	1.0
Sep 1989	638	-11.3	-7.7
Oct 1989	636	-0.3	-11.4
Nov 1989	687	8.0	5.7
Dec 1989	633	-7.9	-5.4
Jan 1990	613	-3.2	-12.9
Feb 1990	606	-1.1	-2.7
Mar 1990	558	-7.9	0.4
Apr 1990	533	-4.5	-12.6
May 1990	536	0.6	-17.7
Jun 1990	559	4.3	-13.5
Jul 1990	558	-0.2	-24.7
Aug 1990	***550***	***-1.4***	***-23.5***
Annual Averages:			
1988	676		0.8
1989	654		-3.3

Regional Data

	Northeast	Midwest	South	West
Aug 1989	88	100	294	236
Feb 1990	68	84	265	189
Mar 1990	84	94	221	159
Apr 1990	86	90	209	148
May 1990	71	91	215	159
Jun 1990	83	96	237	143
Jul 1990	77	94	249	138
Aug 1990	***77***	***91***	***244***	***139***
Annual Averages:				
1988	101	98	271	206
1989	90	103	258	202
Percent Changes in August 1990 since:				
Aug 1989	-12.5	-9.0	-17.0	-41.1
Jul 1990	0.0	-3.2	-2.0	0.7

Source: Bureau of the Census, Construction Reports, Series C25



Source: Bureau of Census; Real Estate Outlook forecast

Source: Bureau of Census

The rate of new homes sold declined 1.4 percent in August and stood at only three-quarters of the rate of sales in August 1989. This marks the ninth month in the past year that the sales pace has fallen. During the second quarter, new homes were sold at a 543,000-unit annual rate, 8.2 percent below the first quarter's rate.

The 550,000-unit figure for August and a 10,000 unit upward revision to July's figure has led NAR to up its projection of new homes sold during the third quarter to 551,000 units. For the next few quarters, uncertainty about the economy will dampen new home sales activity. The pace is expected to drop to 524,000 units during the third quarter of 1991 before recovering somewhat to 531,000 units in the fourth quarter. The annual figure for 1991 is projected to be 530,000 units, almost 20 percent below the 1989 figure. Although 1992 will be a year of recovery, the annual rate will stand 16 percent below the 1989 figure.

The sales rates in the Midwest and the South both lost ground in August over July, falling 3.2 percent and 2.0 percent, respectively. Meanwhile, the sales rate held even in the Northeast and climbed almost one percent in the West.

Relative to last year's performance, the August sales rate in the West fell 31 percent, by far the furthest drop of the four regions. The Northeast fell by 14 percent, the Midwest by 11 percent, and the South by 5 percent.

Existing Single-Family Home Sales

(Seasonally Adjusted Annual Rates, in Thousands)

National Data

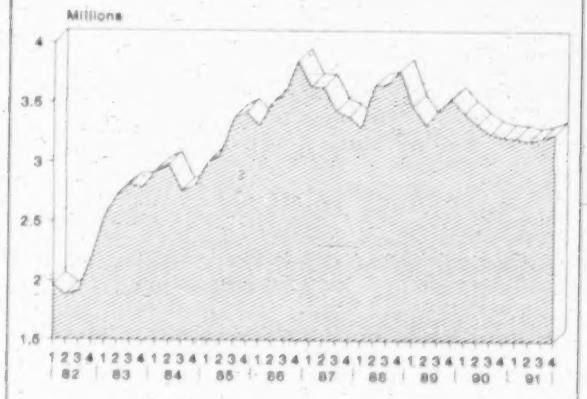
		Mo. Ago % Chg	Yr. Ago % Chg
Jul 1989	3,380	1.5	-7.4
Aug 1989	3,440	1.8	-6.8
Sep 1989	3,510	2.0	-3.8
Oct 1989	3,490	-0.6	-5.2
Nov 1989	3,560	2.0	-4.0
Dec 1989	3,560	0.0	-9.2
Jan 1990	3,470	-2.5	-5.2
Feb 1990	3,400	-2.0	-4.2
Mar 1990	3,400	0.0	-0.9
Apr 1990	3,330	-2.1	-3.2
May 1990	3,300	-0.9	1.5
Jun 1990	3,330	0.9	0.0
Jul 1990	***3,440***	***3.3***	***1.8***
Annual Averages:			
1988	3,594		-1.9
1989	3,467		-3.6

Regional Data

	Northeast	Midwest	South	West
Jul 1989	520	940	1310	570
Feb 1990	560	890	1310	650
Mar 1990	500	910	1360	630
Apr 1990	520	920	1300	580
May 1990	520	880	1320	570
Jun 1990	490	960	1310	580
Jul 1990	***560***	***930***	***1400***	***520***
Annual Averages:				
1988	669	929	1348	643
1989	590	931	1320	617
Percent changes in July 1990 since:				
Jul 1989	7.7	-1.1	6.9	-8.8
Jun 1990	14.3	-3.1	6.9	-10.3

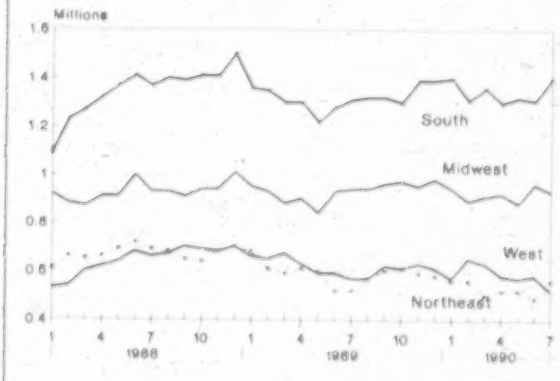
Source: Bureau of the Census, Construction Reports, Series C25

Existing Home Sales



Source: NAR Economics & Research, Real Estate Outlook forecast

Existing Home Sales by Region



Source: NAR Economics & Research

For the first time since September 1989, the sales rate for existing homes posted back-to-back gains in July. The 3.3 percent increase followed June's 0.9 percent gain, leaving July's rate at 3,440,000 units. This placed sales 1.8 percent ahead of last July's figure of 3,330,000 units. During the second quarter, the rate dipped about 3 percent from the first quarter's rate.

Despite these modest gains, existing home sales have not hit bottom, according to the NAR forecast. The sales pace is expected to hit 3,191,000-units during next year's second quarter before staging a modest but sustainable recovery. Jitters about the health of the U.S. economy will lead homebuyers to remain cautious throughout the remainder of 1990. As the economy recovers from the mild recession and enjoys lower interest rates, existing home sales are expected to slowly revive. In 1991, sales are expected fall 2.7 percent from 1990. In 1992, sales are projected to grow 3.2 percent.

While the housing market is in a slump, it isn't moribund. Both the Northeast and the South reversed decreases in the sales rate in July by picking up 14.3 percent and 6.9 percent, respectively. The South's 1,400,000-unit annual rate during July was stronger than the region's annual rates in both 1988 and 1989. The Midwest's July rate just matches that of the two previous years. The West, however, was about 16 percent off in July from its 1989 performance.

Single-Family Home Prices

(In Dollars)

National Data

	Median		Average	
	Existing	New	Existing	New
Jul 1989	95,200	116,000	121,000	140,300
Feb 1990	95,200	125,200	118,300	150,900
Mar 1990	96,300	119,400	119,500	144,600
Apr 1990	95,600	130,000	117,800	153,400
May 1990	95,600	125,000	118,700	150,600
Jun 1990	97,500	125,000	121,100	150,400
Jul 1990	***98,400***	***120,000***	***121,000***	***150,200***
Annual Averages:				
1988	89,200	113,400	112,500	138,900
1989	92,900	120,400	118,000	148,300
Percent changes in July 1990 since:				
Jul 1989	3.4	3.4	0.0	7.1
Jun 1990	0.9	-4.0	-0.1	-0.1

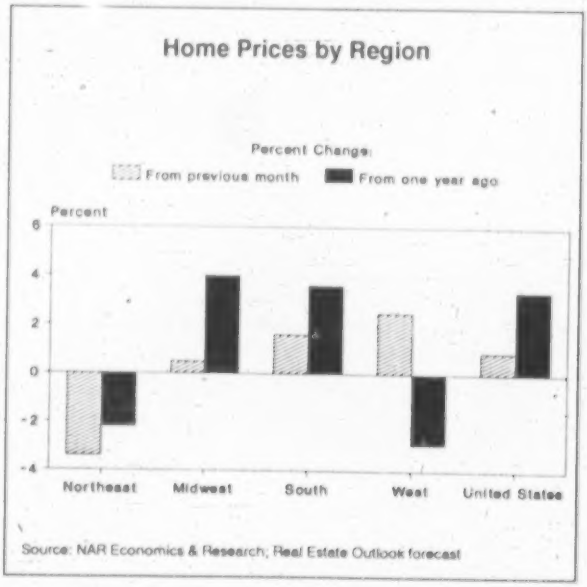
Regional Data

Median Prices for Existing Single-Family Homes

	Northeast	Midwest	South	West
Jul 1989	146,500	73,400	85,800	145,700
Feb 1990	143,400	74,100	85,200	143,300
Mar 1990	148,800	73,500	86,000	141,800
Apr 1990	140,700	75,300	85,900	137,600
May 1990	141,300	73,500	85,100	141,800
Jun 1990	148,300	75,900	87,500	138,100
Jul 1990	***143,300***	***76,300***	***88,900***	***141,500***
Annual Averages:				
1988	142,500	68,200	82,200	124,700
1989	145,100	71,200	84,400	139,800
Percent changes in July 1990 since:				
Jul 1989	-2.2	4.0	3.6	-2.9
Jun 1990	-3.4	0.5	1.6	2.5

Source: National Association of Realtors
Economics and Research Division

Source: Bureau of Census; E Real Estate Outlook forecast



Source: NAR Economics & Research; Real Estate Outlook forecast

The median prices of existing and new single-family homes took divergent paths in July, with the price for existing homes rising 0.9 percent, or $900, and that for new homes falling 4.0 percent, or $5,000. Both measures have gained an indentical 3.4 percent over the past year, however. The existing home price in July stood at $98,400, and the price for new homes came in at $120,000. Both increases came during a period of weakness in the housing markets, when prices on individual homes are less likely to be rising. This suggests that the composition of homes being sold is changing -- the ratio of high-priced homes to low-priced homes is rising, forcing the median price up.

The average price for existing homes gained no ground in the past twelve months, returning in July to the $121,000 level it stood at a year ago. The average price of a new home, meanwhile, has risen steeply, gaining $9,900, or 7.1 percent.

The forecast calls for the median price on existing homes to be $96,700 in 1990 and $97,700 in 1991, yielding growth rates for the two years of 4.1 percent and 1.0 percent, respectively. The median price on new homes is expected to gain 4.0 percent in 1990 and 1.7 percent in 1991.

Robert D. Barr
Director of Forecasting
Forecasting & Policy Analysis Division

AUCTIONS VERSUS PRIVATE SALES OF HOUSES: A DESCRIPTION AND EMPIRICAL ANALYSIS OF THE MELBOURNE, AUSTRALIA MARKET - PART 2

by Kenneth M. Lusht*
Chairman, Department of Insurance and Real Estate
The Pennsylvania State University

PRICE FORMATION AT AUCTIONS AND IN PRIVATE SALES

Auctions

Auctions have a long history. Herodotus reports the use of auctions as early as 500 BC, when men bid for women to marry. Roman emperors Caligula and Aurelius auctioned heirlooms to pay debts. The Romans apparently used the "English" (ascending bid) type of auction, as the word auction is derived from the Latin root auctus (an increase). There are other accounts of auctions in ancient Babylonia, Greece, China, and Japan.

The types of goods sold by auction is long and varied; included are antiques, art, cattle, U.S. Treasury bills, mineral rights, fresh fish, and real property. There are auctions for rare items like diamonds, perishables like fresh fish, and durables like houses. Supply and construction contracts are commonly let by auction.

Auctions may be for a unique unit, as is the case for a painting or a house, for multiple units of a unique product, as is the case for cases of fine wine, or for a package of non-identical items, such as a family of slaves in the 1800's or a group of investment properties today. Auctions are also used to market multiple units of a more or less homogeneous good, such as U.S. Treasury bills and tulip bulbs in the Netherlands.

The diversity of commodities commonly auctioned is such that it is difficult to isolate the characteristics that distinguish them from commodities that tend not to be auctioned. Milgrom (1986) suggests that the only clear differentiation is the " ... need to establish individual prices for each item sold." An example: "Used cars, whose condition varies over a wide range, are sold to dealers by auctions; new cars are not ... Similarly, the price of fresh fish needs to be determined daily, because the supply varies continuously."

The question of why auctions are widely used can also be answered from the perspective of the prices they produce. In general, auctions tend to produce efficient and stable outcomes. This means that over a wide range of assumptions concerning the relative bargaining processes of sellers and buyers, auctions tend to produce the highest possible price; that is, a successful bidder cannot resell at a profit, nor is it likely that there was an interested buyer willing to pay more. However, this does not mean that all auction types will always produce the same price, nor that auctions are always the optimal marketing form.

Auctions Versus Private Sales

The theory with respect to auctions (in general) versus other price-forming mechanisms such as private sales is much less developed than the theory comparing alternative auctions, and the received wisdom tends to be based more on informed speculation than on rigorous analysis.

Milgrom (1989) compares the three general categories of pricing systems: 1) posted, non-negotiable prices as in a grocery store, 2) negotiated prices as in the private sale of houses, and 3) auctions.

Posted prices are used when products are homogeneous and relatively low priced, and when supply will be sufficient to meet the demand. Prices are widely known and easily compared, and as a result buyers and sellers are virtually identical. Because the probability of identifying a buyer willing to pay more is trivial, there is no incentive for a seller (or buyer) to incur the added costs involved in negotiating or auctioning.

Negotiation tends to be used for products that are less standardized and those that tend to have higher unit prices, and when it is relatively costly to

*This study was funded by a grant from the NATIONAL ASSOCIATION OF REALTORS®

match supply and demand. Compared to auctions, negotiation tends to be used when there are fewer potential buyers. Milgrom (1986) shows that when there is only a single likely buyer, negotiation is likely to be preferred by the seller, given the criterion of revenue maximization. With more than one buyer however, auction is almost always preferred. Vincent (1988) arrives at a similar conclusion ("few" versus "many" potential buyers) based on the costs to the seller of transmitting private information to potential buyers. Because information costs are borne partly by the seller, when there are fewer potential buyers it may be preferable from a net revenue standpoint to negotiate with one of the buyers than to auction.

Given the wide range of products and circumstances where auctions are commonly used -- from cut flowers in Holland to real estate in Melbourne -- the single characteristic which tends to separate auction and non-auction marketing is that the former is used when prices are uncertain or unstable. In turn, the characteristics most often associated with uncertain or unstable prices are relatively unique or heterogeneous products with high market values. Also, in a market where demand exceeds supply and buyers may be more impatient than sellers, the competitive pressure of the auction process may induce that impatience, leading to maximum expected revenues. In such markets, potential buyers may be concerned about getting "carried away" and overbidding. To minimize that possibility, some potential house buyers in Melbourne hire agents to attend the auctions and do the bidding.

Milgrom (1989) provides a reason why auctions may produce higher revenues in a wide range of situations where the value to the seller is below the value to potential buyers. In such cases, negotiation leads to a price that is the average of the values, while bidding will produce a price that is equal to the second highest bidder's valuation.

Finally, it can be speculated that if buyers have correlated beliefs about value, then an English auction is likely to produce higher revenues than private negotiations. With private negotiation, as in the private sale of a house, the seller's problem is to make an accept/reject decision on each offer as it arrives sequentially. Because the seller does not know the distribution of possible bids, there is a positive probability of accepting too soon.

Empirical Evidence: Auctions Versus Negotiations

Most of the studies that compare prices produced by negotiation versus competitive bidding have involved bond underwritings, with two important results: 1) competitive bidding produces lower costs (higher prices) to bond issuers, and 2) increased competition (more bidders) produces lower costs to bond issuers. A strong positive association between the level of competition and resulting prices was also found; an average price differential of 50% between military contracts let by negotiation compared to competitive bidding.

There also appears to be linkages among prices, the number of bidders, and risk. Riskier (often smaller and less valuable) bond issues tend to attract fewer bidders and thus produce higher costs to issuers.

Sorensen (1979) finds that for lower rated bonds having few bidders ("one or two"), net cost savings are possible using negotiation. Similarly, another study finds the winning bids from auctions with a single bidder to be lower than those from auctions and those with two or three bidders. This result supports the theoretical prediction of Milgrom (1986), and is consistent with the intuition that auctions are increasingly preferred as competition among buyers increases.

There has been no empirical work that tests either the proposition that setting a reserve price increases expected revenues, or that there is an "optimal" reserve price. McAfee and McMillan (1987) refer to indirect evidence that the reserve price should be set above the seller's valuation, and that there should be a commitment to it; that is, in the Netherlands, cut flowers that do not attain the reserve price are destroyed rather than sold at a below-reserve price.

Finally, there is a growing literature that tests the existence of the "winner's curse." Though the results are mixed, the weight of evidence seems to be shifting toward the view that buyers recognize the possibility of overbidding and discount their bids accordingly.

Auctions versus Private Sales: Theory and Evidence, and Behavior in Melbourne Housing Markets

A consensus of the theory and empirical evidence suggests the following conclusions. A profile of those market and product characteristics that favor the use of an auction instead of a posted price or negotiation would include a non-standard good, relatively few units of that good, relatively high values, a relatively high level of competition among buyers, and the ability to provide information to those buyers. Product characteristics aside, negotiation is generally favored when there are relatively few possible buyers and/or the costs of informing those buyers is high.

There appears to be a positive association between the number of bidders and the expected price from an auction, and a positive association between the quality (and value) of the product and the number of bidders. With risk averse bidders, the first price auction produces the highest expected revenue. With affiliated bids, the English auction produces the highest expected revenue.

A commitment to a reserve price increases expected revenue, and if it is not binding (in the sense bidding is allowed to continue even when the reserve price is reached), the English auction is optimal.

There are also less well developed but intuitively appealing arguments that keeping the number of bidders secret is to the seller's advantage, and that with affiliated bids, the ultimate selling price of an item "passed in" (not sold at auction) is adversely affected. However, acknowledging a "passed-in" auction may have the offsetting benefit of confirming the commitment to a minimum price.

These conclusions are strikingly consistent with marketing behavior in Melbourne housing markets. Auctions there tend to be favored for selling high quality, relatively unique properties. Auctions tend to be used most during periods of high demand and rapidly rising prices. When an auction is used to sell a house, the English auction is almost always the choice. When commercial properties are sold by auction (which is almost always), the English auction dominates, but with increasing use of first-price bidding.

Compared to a private sale, preparation for an auction sale generally involves a more intensive and costly effort to increase the number of bidders and, to educate potential bidders. This is done through heavier advertising, and more frequent open houses and individual inspections.

The use of reserve prices is universal, and they are almost always kept secret, likely to encourage greater participation by bidders.

The most controversial of auction practice in Melbourne, the use of seller bids, has not been analyzed, but it can be speculated to have effects generally associated with higher expected prices: Seller bids artificially increase competition, which takes advantage of correlated beliefs and affiliated bids, and conceals the true number of bidders.

AUCTIONS VERSUS PRIVATE NEGOTIATIONS: PRICE DIFFERENCES

The theoretical prediction that pricing mechanisms probably matter has been only weakly supported empirically, and has yet to be tested with respect to English auctions versus private negotiations. This section reports the results of such a test in the Melbourne housing market.

The percentage of houses listed for sale by auction (74%), as well as the percentages of auction listings that sold before auction (12%), at auction (71%), and after auction (17%), are representative of the population of listings and sales in the market area during the study period. There is no statistically significant difference (at the 5% level) in the mean selling prices of any listing-sale pairs.

Data

The sample includes 309 single family detached dwellings that were sold within a market area commonly described as the inner-eastern suburbs of Melbourne from January 1, 1988, through March 31, 1989. The houses were sold through a single agency, and included all of the sales for which complete information could be obtained at reasonable cost. The area from which the sample was drawn is approximately 50 square miles, all within 15 miles of the Central Business

District. It is an upper-middle-income area of high-middle to high-priced houses. The sample included houses that sold from $140,000 to $425,000. The January 1988-March 1989 time period was one of historically high activity in terms of the number of listings and sales, and one in which house prices in Melbourne escalated rapidly, especially in the sample market.

The Empirical Model

The objective was to explain differences in selling prices among houses as a function of how they were listed and sold. Ordinary least squares regression was the statistical model used.

The usual list of physical, functional, and locational variables were included. In addition, as being of either normal or below normal patience, and expected market interest in each property was also as being either normal or below normal

The main variables of interest were how the houses were listed and sold. There were four possible joint outcomes: 1) listed privately, sold privately, 2) listed for auction, sold before auction, 3) listed for auction, sold at auction, and 4) listed for auction, sold after auction. Listed for auction and sold at auction was the default variable.

It is expected that in this market, houses listed and sold at auction will bring higher prices than those listed and sold privately. Expectations with respect to the prices brought by houses listed for auction, but sold before or after the auction are less clear; there is no extant theory and no prior empirical results for guidance. Informed speculation is possible however. First, there is a widely held view among agents in Melbourne that during periods of rapidly escalating prices, it seldom makes sense to sell before an auction, except when a very high price is offered. Specifically, the price must exceed by a significant amount the seller's expectation of the price that will be brought at auction. Given that agents in most cases have extensive information about the intensity of interest in a property, it is reasonable to think that they are able to make accurate judgments about likely prices. This assumption has been found to hold in other auction markets.

The expectation then, is that the prices of houses listed for sale by auction but sold privately before auction will be no lower than, and are likely to be higher than prices brought at auction. The expectation is that houses listed for sale by auction but "passed-in" and sold after auction will bring prices that are no higher than, and are likely to be lower than prices brought at auction. A property that is "passed-in" at auction is generally perceived as a failed effort by the agent, and almost always by the seller who now has "dead-weight" costs of advertising. A failed auction also places buyers in a much stronger bargaining position, particularly if the property's price will be adversely affected by the failure, which is likely if buyer's valuations are affiliated. A failed auction also induces impatience in sellers, and likely in agents, who are in a position to lose the commission unless the property is sold within 30 days of the failed auction. In the sample, all of the houses that were passed-in sold within five weeks of the auction.

Empirical Results

The model performed quite well with most coefficients of plausible size and significant. Of particular interest here, sellers judged to be patient extracted prices that were on average $14,585 higher than the prices extracted by less patient sellers. The difference is significant at the 5% level, and is slightly less than 6% of the mean sale price. Properties expected to generate at least "normal" levels of market interest produced prices that were on average $9,246 higher than the prices produced by properties expected to generate below normal interest. The difference is significant at the 10% level, and is slightly less than 4% of the mean sale price.

The highest prices were brought by auction listings that were sold before auction, followed in order by auction listings sold at auction, auction listings sold after auction, and finally, private listings sold privately. Houses listed for sale by auction and sold either before auction or at auction brought higher prices than houses that sold privately, or that were listed for auction, passed-in, and then sold after the auction. The most important result is that a private listing and sale brought $16,202 less on average than an auction listing and sale at auction, a difference significant at the 1% level. Evaluated at the mean sale price, this is about a 6.5% difference,

5.5% net of the average auction advertising costs of 1%.

Houses listed for sale by auction but sold before auction brought a slight (about 2%) and statistically insignificant premium over houses sold at auction. Houses listed for sale by auction but passed-in and sold after auction brought a lower price (about 4%) than houses sold at auction, but the difference is statistically insignificant.

The results are consistent with the expectation that auction sales would bring higher prices than private sales. However, the results also show that houses listed for auction but sold privately (before or after auction) brought higher prices than houses listed and sold privately. This raises the issue of whether the results are a function of listing effects as well as market and selling effects. Perhaps the heavier advertising and other more intensive marketing efforts that accompany auction listings have price effects regardless of the ultimate selling mechanism.

There is no completely satisfactory way to unbundle the listing and market/selling effects; they do not occur separately in nature. Further, while before or after auction sales are "private," they are clearly influenced by the institutions accompanying an auction listing, and the various market pressures discussed. This is an interesting topic for future inquiry.

At this point, we can speculate that selling effects dominate listing effects. If the opposite were true, we would expect to see most houses in most markets listed for sale by auction. That is not the case.

This leads to a final caveat. These results are from a high-priced submarket during a period of rapidly rising prices. How the outcome would differ under different conditions is not clear.

REFERENCES

Ashenfelter, O., 1989. "How Auctions Work for Wine and Art," Journal of Economic Perspectives, Vol. 3, Summer, 23-36.

McAfee, R., and McMillan, J., 1987. "Auctions and Bidding," Journal of Economic Literature, XXV, June, 699-738.

Milgrom P., and Weber, R., 1982. "A Theory of Auctions and Competitive Bidding," Econometrica, September, 1089-1122.

Milgrom, P., 1986. "Auction Theory," Advances in Economic Theory 1985, Ed. Truman Bewley, Cambridge: Cambridge University Press, 1986, 1-32.

Milgrom, P., 1989. "Auctions and Bidding: A Primer," Journal of Economic Perspectives, Summer, 3-22.

Sorensen, E., 1979. "Negotiated Municipal Bond Underwritings: Implication for Efficiency," Journal of Money, Credit and Banking, August. 366-370.

Vincent, D., 1988. "Dynamic Auctions," Discussion Paper 770, Northwestern University.

Existing Home Sales

Thousands of Units; Percent Change from One Month Ago; Percent Change from One Year Ago

	U.S.			Northeast			Midwest			South			West			
86.01	3,400	-1.2	13.3	730	5.8	28.1	910	-2.2	13.8	1,210	-1.6	9.0	540	-6.9	3.8	86.01
86.02	3,350	-1.5	13.6	680	-6.8	25.9	920	1.1	21.1	1,180	-2.5	4.4	560	3.7	5.7	86.02
86.03	3,270	-2.4	7.9	640	-5.9	12.3	950	3.3	20.3	1,110	-5.9	-2.6	570	1.8	5.6	86.03
86.04	3,580	9.5	18.2	710	10.9	24.6	1,070	12.6	33.8	1,220	9.9	7.0	590	3.5	11.3	86.04
86.05	3,440	-3.9	12.8	690	-2.8	21.1	980	-8.4	19.5	1,200	-1.6	8.1	580	-1.7	5.5	86.05
86.06	3,460	0.6	10.5	670	-2.9	9.8	990	1.0	16.5	1,220	1.7	8.9	580	0.0	5.5	86.06
86.07	3,510	1.4	9.7	680	1.5	7.9	950	-4.0	4.4	1,280	4.9	10.3	600	3.4	17.6	86.07
86.08	3,600	2.6	3.4	690	1.5	4.5	1,000	5.3	5.3	1,280	0.0	0.0	630	5.0	8.6	86.08
86.09	3,670	1.9	7.0	710	2.9	4.4	1,020	2.0	8.5	1,320	3.1	9.1	620	-1.6	3.3	86.09
86.10	3,670	0.0	7.0	720	1.4	4.3	1,000	-2.0	6.4	1,310	-0.8	7.4	650	4.8	10.2	86.10
86.11	3,860	5.2	13.5	710	-1.4	6.0	1,040	4.0	13.0	1,450	10.7	17.9	660	1.5	15.8	86.11
86.12	3,970	2.8	15.4	810	14.1	17.4	1,060	1.9	14.0	1,370	-5.5	11.4	730	10.6	25.9	86.12
87.01	3,580	-9.8	5.3	680	-16.0	-6.8	1,030	-2.8	13.2	1,270	-7.3	5.0	610	-16.4	13.0	87.01
87.02	3,730	4.2	11.3	720	5.9	5.9	1,080	4.9	17.4	1,310	3.1	11.0	620	1.6	10.7	87.02
87.03	3,770	1.1	15.3	740	2.8	15.6	1,120	3.7	17.9	1,320	0.8	18.9	590	-4.8	3.5	87.03
87.04	3,580	-5.0	0.0	680	-8.1	-4.2	1,020	-8.9	-4.7	1,280	-3.0	4.9	600	1.7	1.7	87.04
87.05	3,740	4.5	8.7	720	5.9	4.3	1,000	-2.0	2.0	1,390	8.6	15.8	630	5.0	8.6	87.05
87.06	3,520	-5.9	1.7	690	-4.2	3.0	910	-9.0	-8.1	1,280	-7.9	4.9	640	1.6	10.3	87.06
87.07	3,500	-0.6	-0.3	690	0.0	1.5	930	2.2	-2.1	1,260	-1.6	-1.6	620	-3.1	3.3	87.07
87.08	3,380	-3.4	-6.1	670	-2.9	-2.9	870	-6.5	-13.0	1,260	0.0	-1.6	580	-6.5	-7.9	87.08
87.09	3,400	0.6	-7.4	670	0.0	-5.6	900	3.4	-11.8	1,270	0.8	-3.8	560	-3.4	-9.7	87.09
87.10	3,430	0.9	-6.5	660	-1.5	-8.3	910	1.1	-9.0	1,280	0.8	-2.3	580	3.6	-10.8	87.10
87.11	3,330	-2.9	-13.7	660	0.0	-7.0	890	-2.2	-14.4	1,230	-3.9	-15.2	560	-3.4	-15.2	87.11
87.12	3,240	-2.7	-18.4	640	-3.0	-21.0	860	-3.4	-18.9	1,190	-3.3	-13.1	560	0.0	-23.3	87.12
88.01	3,200	-1.2	-10.6	610	-4.7	-10.3	920	7.0	-10.7	1,090	-8.4	-14.2	530	-5.4	-13.1	88.01
88.02	3,320	3.8	-11.0	660	8.2	-8.3	880	-4.3	-18.5	1,230	12.8	-6.1	540	1.9	-12.9	88.02
88.03	3,382	1.9	-10.3	650	-1.5	-12.2	870	-1.1	-22.3	1,270	3.3	-3.8	600	11.1	1.7	88.03
88.04	3,510	3.8	-2.0	660	1.5	-2.9	910	4.6	-10.8	1,320	3.9	3.1	620	3.3	3.3	88.04
88.05	3,620	3.1	-3.2	690	4.5	-4.2	910	0.0	-9.0	1,370	3.8	-1.4	640	3.2	1.6	88.05
88.06	3,800	5.0	8.0	720	4.3	4.3	1,000	9.9	9.9	1,410	2.9	10.2	680	6.3	6.3	88.06
88.07	3,650	-3.9	4.3	690	-4.2	0.0	930	-7.0	0.0	1,370	-2.8	8.7	660	-2.9	6.5	88.07
88.08	3,690	1.1	9.2	680	-1.4	1.5	930	0.0	6.9	1,400	2.2	11.1	670	1.5	15.5	88.08
88.09	3,650	-1.1	7.4	650	-4.4	-3.0	910	-2.2	1.1	1,390	-0.7	9.4	700	4.5	25.0	88.09
88.10	3,680	0.8	7.3	640	-1.5	-3.0	940	3.3	3.3	1,410	1.4	10.2	690	-1.4	19.0	88.10
88.11	3,710	0.8	11.4	660	6.3	3.0	940	0.0	5.6	1,410	0.0	14.6	680	-1.4	21.4	88.11
88.12	3,920	5.7	21.0	700	2.9	9.4	1,010	7.4	17.4	1,500	6.4	26.1	700	2.9	25.0	88.12
89.01	3,660	-6.6	14.4	680	-2.9	11.5	950	-5.9	3.3	1,360	-9.3	24.8	660	-5.7	24.5	89.01
89.02	3,550	-3.0	6.9	610	-10.3	-7.6	930	-2.1	5.7	1,350	-0.7	9.8	650	-1.5	20.4	89.02
89.03	3,430	-3.4	1.4	590	-3.3	-9.2	880	-5.4	1.1	1,300	-3.7	2.4	670	3.1	11.7	89.03
89.04	3,440	0.3	-2.0	610	3.4	-7.6	900	2.3	-1.1	1,300	0.0	-1.5	630	-6.0	1.6	89.04
89.05	3,250	-5.5	-10.2	600	-1.6	-13.0	840	-6.7	-7.7	1,220	-6.2	-10.9	590	-6.3	-1.8	89.05
89.06	3,330	2.5	-12.4	520	-13.3	-27.8	930	10.7	-7.0	1,280	4.9	-9.2	590	0.0	-13.2	89.06
89.07	3,380	1.5	-7.4	520	0.0	-24.6	940	1.1	1.1	1,310	2.3	-4.4	570	-3.4	-13.6	89.07
89.08	3,440	1.8	-6.8	570	9.6	-16.2	940	0.0	1.1	1,320	0.8	-5.7	570	0.0	-14.9	89.08
89.09	3,510	2.0	-3.8	600	5.3	-7.7	960	2.1	5.5	1,320	0.0	-5.0	620	8.8	-11.4	89.09
89.10	3,490	-0.6	-5.2	610	1.7	-4.7	970	1.0	3.2	1,300	-1.5	-7.8	610	-1.6	-11.6	89.10
89.11	3,560	2.0	-4.0	590	-3.3	-13.2	950	-2.1	1.1	1,390	6.9	-1.4	630	3.3	-7.4	89.11
89.12	3,560	0.0	-9.2	580	-1.7	-17.1	980	3.2	-3.0	1,390	0.0	-7.3	610	-3.2	-12.9	89.12
90.01	3,470	-2.5	-5.2	560	-3.4	-17.6	940	-4.1	-1.1	1,400	0.7	2.9	570	-6.6	-13.6	90.01
90.02	3,400	-2.0	-4.2	560	0.0	-8.2	890	-5.3	-4.3	1,310	-6.4	-3.0	650	14.0	0.0	90.02
90.03	3,400	0.0	-0.9	500	-10.7	-15.3	910	2.2	3.4	1,360	3.8	4.6	630	-3.1	-6.0	90.03
90.04	3,330	-2.1	-3.2	520	4.0	-14.8	920	1.1	2.2	1,300	-4.4	0.0	580	-7.9	-7.9	90.04
90.05	3,300	-0.9	1.5	520	0.0	-13.3	880	-4.3	4.8	1,320	1.5	8.2	570	-1.7	-3.4	90.05
90.06	3,330	0.9	0.0	490	-5.8	-5.8	960	9.1	3.2	1,310	-0.8	2.3	580	1.8	-1.7	90.06
90.07	3,440	3.3	1.8	560	14.3	7.7	930	-3.1	-1.1	1,400	6.9	6.9	520	-10.3	-8.8	90.07

Source: NATIONAL ASSOCIATION OF REALTORS®

Housing Starts

Thousands of Units; Percent Change from One Month Ago; Percent Change from One Year Ago

	Total			Single-Family			2-4 Multi-Family			5+ Multi-Family			
86.01	1972	1.5	15.3	1270	13.1	28.5	100	16.3	-1.0	602	-17.9	-3.2	86.01
86.02	1848	-6.3	13.2	1143	-10.0	6.1	102	2.0	12.1	603	0.2	30.0	86.02
86.03	1876	1.5	4.2	1180	3.2	4.7	79	-22.5	-22.5	617	2.3	8.1	86.03
86.04	1933	3.0	6.2	1197	1.4	8.5	80	1.3	-27.3	656	6.3	7.9	86.04
86.05	1854	-4.1	10.4	1228	2.6	19.6	83	3.8	-21.0	543	-17.2	-0.9	86.05
86.06	1847	-0.4	10.2	1221	-0.6	18.7	76	-8.4	-20.0	550	1.3	-0.4	86.06
86.07	1782	-3.5	5.8	1153	-5.6	6.9	80	5.3	-8.0	549	-0.2	6.0	86.07
86.08	1807	1.4	3.7	1194	3.6	10.8	86	7.5	-9.5	527	-4.0	-7.5	86.08
86.09	1687	-6.6	0.7	1137	-4.8	11.5	64	-25.6	-28.9	486	-7.8	-14.1	86.09
86.10	1681	-0.4	-8.3	1126	-1.0	-2.9	84	31.3	6.3	471	-3.1	-20.8	86.10
86.11	1623	-3.5	-4.4	1113	-1.2	7.0	71	-15.5	-10.1	439	-6.8	-24.2	86.11
86.12	1833	12.9	-5.6	1227	10.2	9.3	111	56.3	29.1	495	12.8	-32.5	86.12
87.01	1774	-3.2	-10.0	1224	-0.2	-3.6	76	-31.5	-24.0	474	-4.2	-21.3	87.01
87.02	1784	0.6	-3.5	1282	4.7	12.2	71	-6.6	-30.4	431	-9.1	-28.5	87.02
87.03	1726	-3.3	-8.0	1205	-6.0	2.1	86	21.1	8.9	435	0.9	-29.5	87.03
87.04	1614	-6.5	-16.5	1181	-2.0	-1.3	62	-27.9	-22.5	371	-14.7	-43.4	87.04
87.05	1628	0.9	-12.2	1141	-3.4	-7.1	68	9.7	-18.1	419	12.9	-22.8	87.05
87.06	1594	-2.1	-13.7	1092	-4.3	-10.6	83	22.1	9.2	419	0.0	-23.8	87.06
87.07	1575	-1.2	-11.6	1137	4.1	-1.4	62	-25.3	-22.5	376	-10.3	-31.5	87.07
87.08	1605	1.9	-11.2	1120	-1.5	-6.2	59	-4.8	-31.4	426	13.3	-19.2	87.08
87.09	1695	5.6	0.5	1232	10.0	8.4	49	-16.9	-23.4	414	-2.8	-14.8	87.09
87.10	1515	-10.6	-9.9	1090	-11.5	-3.2	64	30.6	-23.8	361	-12.8	-23.4	87.10
87.11	1656	9.3	2.0	1112	2.0	-0.1	52	-18.8	-26.8	492	36.3	12.1	87.11
87.12	1400	-15.5	-23.6	1034	-7.0	-15.7	51	-1.9	-54.1	315	-36.0	-36.4	87.12
88.01	1339	-4.4	-24.5	986	-4.6	-19.4	51	0.0	-32.9	302	-4.1	-36.3	88.01
88.02	1507	12.5	15.5	1101	11.7	-14.1	57	11.8	-19.7	349	15.6	-19.0	88.02
88.03	1541	2.3	-10.7	1188	7.9	-1.4	59	3.5	-31.4	294	-15.8	-32.4	88.03
88.04	1570	1.9	-2.7	1070	-9.9	-9.4	57	-3.4	-8.1	443	50.7	19.4	88.04
88.05	1414	-9.9	-13.1	1011	-5.5	-11.4	54	-5.3	-20.6	349	-21.2	-16.7	88.05
88.06	1476	4.4	-7.4	1100	8.8	0.7	63	16.7	-24.1	313	-10.3	-25.3	88.06
88.07	1460	-1.1	-7.3	1056	-4.0	-7.1	51	-19.0	-17.7	353	12.8	-6.1	88.07
88.08	1480	1.4	-7.8	1088	3.0	-2.9	60	17.6	1.7	332	-5.9	-22.1	88.08
88.09	1475	-0.3	-13.0	1046	-3.9	-15.1	64	6.7	30.6	365	9.9	-11.8	88.09
88.10	1511	2.4	-0.3	1128	7.8	3.5	58	-9.4	-9.4	325	-11.0	-10.0	88.10
88.11	1556	3.0	-6.0	1125	-0.3	1.2	69	19.0	32.7	362	11.4	-26.4	88.11
88.12	1564	0.5	11.7	1131	0.5	9.4	62	-10.1	21.6	371	2.5	17.8	88.12
89.01	1659	6.1	23.9	1188	5.0	20.5	66	6.5	29.4	405	9.2	34.1	89.01
89.02	1454	-12.4	-3.5	1026	-13.6	-6.8	60	-9.1	5.3	368	-9.1	5.4	89.02
89.03	1405	-3.4	-8.8	979	-4.6	-17.6	51	-15.0	-13.6	375	1.9	27.6	89.03
89.04	1341	-4.6	-14.6	1028	5.0	-3.9	62	21.6	8.8	251	-33.1	-43.3	89.04
89.05	1308	-2.5	-7.5	977	-5.0	-3.4	43	-30.6	-20.4	288	14.7	-17.5	89.05
89.06	1414	8.1	-4.2	971	-0.6	-11.7	55	27.9	-12.7	388	34.7	24.0	89.06
89.07	1424	0.7	-2.5	1029	6.0	-2.6	58	5.5	13.7	337	-13.1	-4.5	89.07
89.08	1325	-7.0	-10.5	987	-4.1	-9.3	54	-6.9	-10.0	284	-15.7	-14.5	89.08
89.09	1263	-4.7	-14.4	969	-1.8	-7.4	56	3.7	-12.5	238	-16.2	-34.8	89.09
89.10	1423	12.7	-5.8	1023	5.6	-9.3	60	7.1	3.4	340	42.9	4.6	89.10
89.11	1347	-5.3	-13.4	1010	-1.3	-10.2	47	-21.7	-31.9	290	-14.7	-19.9	89.11
89.12	1273	-5.5	-18.6	931	-7.8	-17.7	53	12.8	-14.5	289	-0.3	-22.1	89.12
90.01	1568	23.2	-5.5	1099	18.0	-7.5	53	0.0	-19.7	416	43.9	2.7	90.01
90.02	1488	-5.1	2.3	1154	5.0	12.5	42	-20.8	-30.0	292	-29.8	-20.7	90.02
90.03	1307	-12.2	-7.0	996	-13.7	1.7	35	-16.7	-31.4	276	-5.5	-26.4	90.03
90.04	1216	-7.0	-9.3	898	-9.8	-12.6	53	51.4	-14.5	265	-4.0	5.6	90.04
90.05	1206	-0.8	-7.8	897	-0.1	-8.2	36	-32.1	-16.3	273	3.0	-5.2	90.05
90.06	1189	-1.4	-15.9	889	-0.9	-8.4	42	16.7	-23.6	258	-5.5	-33.5	90.06
90.07	1147	-3.5	-19.5	868	-2.4	-15.6	30	-28.6	-48.3	249	-3.5	-26.1	90.07
90.08	1127	-1.7	-14.9	840	-3.2	-14.9	32	6.7	-40.7	255	2.4	-10.2	90.08

Source: Bureau of Census

Housing Starts

Thousands of Units; Percent Change from One Month Ago; Percent Change from One Year Ago

	Northeast			Midwest			South			West			
86.01	322	13.4	47.7	286	4.0	21.2	898	0.3	18.2	466	-4.5	-6.2	86.01
86.02	338	5.0	50.2	280	-2.1	78.3	747	-16.8	-4.1	483	3.6	2.5	86.02
86.03	285	-15.7	18.8	316	12.9	15.3	782	4.7	-5.9	493	2.1	8.4	86.03
86.04	310	8.8	13.6	349	10.4	47.3	761	-2.7	-7.3	513	4.1	4.7	86.04
86.05	274	-11.6	15.1	252	-27.8	-0.8	799	5.0	7.8	529	3.1	18.3	86.05
86.06	286	4.4	5.9	294	16.7	24.1	768	-3.9	4.6	499	-5.7	14.7	86.06
86.07	272	-4.9	25.3	325	10.5	47.1	712	-7.3	-9.4	473	-5.2	2.8	86.07
86.08	330	21.3	44.1	311	-4.3	23.4	708	-0.6	-6.6	458	-3.2	-9.1	86.08
86.09	295	-10.6	20.9	269	-13.5	15.0	698	-1.4	-3.1	425	-7.2	-11.1	86.09
86.10	281	-4.7	-11.1	263	-2.2	3.5	683	-2.1	-14.9	454	6.8	-1.5	86.10
86.11	271	-3.6	13.4	271	3.0	26.0	610	-10.7	-23.0	471	3.7	4.2	86.11
86.12	312	15.1	9.9	365	34.7	32.7	615	0.8	-31.3	541	14.9	10.9	86.12
87.01	302	-3.2	-6.2	423	15.9	47.9	609	-1.0	-32.2	440	-18.7	-5.6	87.01
87.02	262	-13.2	-22.5	360	-14.9	28.6	661	8.5	-11.5	501	13.9	3.7	87.02
87.03	292	11.5	2.5	333	-7.5	5.4	628	-5.0	-19.7	473	-5.6	-4.1	87.03
87.04	258	-11.6	-16.8	290	-12.9	-16.9	662	5.4	-13.0	404	-14.6	-21.2	87.04
87.05	302	17.1	10.2	306	5.5	21.4	629	-5.0	-21.3	391	-3.2	-26.1	87.05
87.06	259	-14.2	-9.4	293	-4.2	-0.3	602	-4.3	-21.6	440	12.5	-11.8	87.06
87.07	267	3.1	-1.8	244	-16.7	-24.9	636	5.6	-10.7	428	-2.7	-9.5	87.07
87.08	264	-1.1	-20.0	290	18.9	-6.8	632	-0.6	-10.7	419	-2.1	-8.5	87.08
87.09	263	-0.4	-10.8	310	6.9	15.2	706	11.7	1.1	416	-0.7	-2.1	87.09
87.10	264	0.4	-6.0	248	-20.0	-5.7	612	-13.3	-10.4	391	-6.0	-13.9	87.10
87.11	263	-0.4	-3.0	333	34.3	22.9	639	4.4	4.8	421	7.7	-10.6	87.11
87.12	234	-11.0	-25.0	269	-19.2	-26.3	577	-9.7	-6.2	320	-24.0	-40.9	87.12
88.01	292	24.8	-3.3	212	-21.2	-49.9	459	-20.5	-24.6	376	17.5	-14.5	88.01
88.02	290	-0.7	10.7	258	21.7	-28.3	592	29.0	-10.4	367	-2.4	-26.7	88.02
88.03	292	0.7	0.0	251	-2.7	-24.6	580	-2.0	-7.6	418	13.9	-11.6	88.03
88.04	252	-13.7	-2.3	337	34.3	16.2	598	3.1	-9.7	383	-8.4	-5.2	88.04
88.05	205	-18.7	-32.1	274	-18.7	-10.5	565	-5.5	-10.2	370	-3.4	-5.4	88.05
88.06	244	19.0	-5.8	268	-2.2	-8.5	584	3.4	-3.0	380	2.7	-13.6	88.06
88.07	249	2.0	-6.7	277	3.4	13.5	566	-3.1	-11.0	368	-3.2	-14.0	88.07
88.08	227	-8.8	-14.0	249	-10.1	-14.1	569	0.5	-10.0	435	18.2	3.8	88.08
88.09	209	-7.9	-20.5	262	5.2	-15.5	581	2.1	-17.7	423	-2.8	1.7	88.09
88.10	197	-5.7	-25.4	268	2.3	8.1	578	-0.5	-5.6	468	10.6	19.7	88.10
88.11	216	9.6	-17.9	270	0.7	-18.9	609	5.4	-4.7	461	-1.5	9.5	88.11
88.12	209	-3.2	-10.7	346	28.1	28.6	607	-0.3	5.2	402	-12.8	25.6	88.12
89.01	288	37.8	-1.4	304	-12.1	43.4	639	5.3	39.2	428	6.5	13.8	89.01
89.02	219	-24.0	-24.5	267	-12.2	3.5	571	-10.6	-3.5	397	-7.2	8.2	89.02
89.03	163	-25.6	-44.2	301	12.7	19.9	547	-4.2	-5.7	394	-0.8	-5.7	89.03
89.04	205	25.8	-18.7	272	-9.6	-19.3	529	-3.3	-11.5	335	-15.0	-12.5	89.04
89.05	174	-15.1	-15.1	243	-10.7	-11.3	515	-2.6	-8.8	376	12.2	1.6	89.05
89.06	168	-3.4	-31.1	242	-0.4	-9.7	553	7.4	-5.3	451	19.9	18.7	89.06
89.07	190	13.1	-23.7	276	14.0	-0.4	531	-4.0	-6.2	427	-5.3	16.0	89.07
89.08	140	-26.3	-38.3	236	-14.5	-5.2	559	5.3	-1.8	390	-8.7	-10.3	89.08
89.09	160	14.3	-23.4	247	4.7	-5.7	486	-13.1	-16.4	370	-5.1	-12.5	89.09
89.10	174	8.8	-11.7	285	15.4	6.3	567	16.7	-1.9	397	7.3	-15.2	89.10
89.11	179	2.9	-17.1	296	3.9	9.6	498	-12.2	-18.2	374	-5.8	-18.9	89.11
89.12	138	-22.9	-34.0	267	-9.8	-22.8	440	-11.6	-27.5	428	14.4	6.5	89.12
90.01	168	21.7	-41.7	373	39.7	22.7	526	19.5	-17.7	501	17.1	17.1	90.01
90.02	224	33.3	2.3	293	-21.4	9.7	581	10.5	1.8	390	-22.2	-1.8	90.02
90.03	139	-37.9	-14.7	280	-4.4	-7.0	520	-10.5	-4.9	368	-5.6	-6.6	90.03
90.04	124	-10.8	-39.5	284	1.4	4.4	469	-9.8	-11.3	339	-7.9	1.2	90.04
90.05	127	2.4	-27.0	256	-9.9	5.3	487	3.8	-5.4	336	-0.9	-10.6	90.05
90.06	113	-11.0	-32.7	241	-5.9	-0.4	535	9.9	-3.3	300	-10.7	-33.5	90.06
90.07	110	-2.7	-42.1	223	-7.5	-19.2	494	-7.7	-7.0	320	6.7	-25.1	90.07
90.08	119	8.2	-15.0	234	4.9	-0.8	441	-10.7	-21.1	333	4.1	-14.6	90.08

Source: Bureau of Census

U.S. Economic Outlook: October 1990

Quarterly figures are seasonally adjusted annual rates

	90.1	90.2	90.3	90.4	91.1	91.2	91.3	91.4	1988	1989	1990	1991	1992
U.S. Economy													
Annual Growth Rate													
Real GNP	1.7	0.4	0.3	-1.1	-1.5	-0.3	2.6	2.7	4.5	2.5	0.8	-0.1	3.0
Industrial Production	0.6	4.1	1.7	-3.7	-4.4	-2.2	3.2	3.7	5.4	2.6	0.9	-1.2	3.6
Civilian Employment	1.0	0.7	-2.0	-0.8	-0.8	-0.7	0.1	0.7	2.3	2.0	0.5	-0.6	1.0
GNP Inflation Index	4.8	4.7	4.9	5.7	6.0	4.0	3.5	3.1	3.3	4.1	4.4	4.9	3.2
Consumer Prices	8.1	3.7	5.4	7.5	7.4	4.6	4.1	3.5	4.1	4.8	5.3	5.8	3.6
Value of the U.S. Dollar	-16.0	-2.0	-21.7	-13.1	-8.2	-3.8	2.3	2.1	-4.3	6.2	-9.4	-8.0	2.6
Percent													
Mfg. Capacity Utilization	82.6	82.7	82.5	82.0	80.7	79.8	79.8	79.8	83.9	83.9	82.5	80.0	80.2
Civilian Unemployment	5.3	5.3	5.6	6.0	6.3	6.7	6.8	6.8	5.5	5.3	5.5	6.7	6.5
Percent of GNP													
Federal Tax Receipts	20.1	20.3	20.1	20.4	20.5	20.4	20.4	20.4	20.0	20.2	20.2	20.4	20.6
Federal Expenditures	23.2	23.4	23.1	23.2	23.2	23.2	23.1	22.9	22.9	22.8	23.2	23.1	22.7
Federal Budget Deficit	-3.1	-3.0	-3.0	-2.8	-2.7	-2.9	-2.7	-2.5	-2.9	-2.6	-3.0	-2.7	-2.1
Interest Rates, Percent													
Federal Funds Rate	8.3	8.2	8.1	7.8	7.6	7.4	7.5	7.5	7.6	9.2	8.1	7.5	7.6
3-Month T-Bill Rate	7.8	7.7	7.4	7.3	7.2	7.0	7.1	7.0	6.7	8.1	7.6	7.1	7.1
Prime Rate	10.0	10.0	10.0	9.7	9.5	9.5	9.5	9.5	9.3	10.9	9.9	9.5	9.5
Discount Rate	7.0	7.0	7.0	7.0	6.9	6.8	6.8	6.8	6.2	6.9	7.0	6.8	6.8
Corporate AAA Bond Yield	9.2	9.4	9.4	9.4	9.2	9.1	9.0	8.9	9.7	9.3	9.3	9.1	8.8
30-Year Government Bond Yield	8.4	8.7	8.8	8.8	8.6	8.5	8.4	8.3	9.0	8.4	8.7	8.4	8.2
Mortgage Rates, Percent													
30-Year Fixed Rate	10.1	10.3	10.1	10.1	9.9	9.8	9.7	9.6	10.3	10.3	10.2	9.8	9.5
1-Year Adjustable	8.4	8.6	8.4	8.3	8.3	8.3	8.2	8.2	8.5	9.3	8.4	8.3	8.0
Home Sales & Starts													
Thousands													
Total Single-Family Sales (Single-family resales plus 97% of single-family starts)	4,474	4,195	4,076	4,036	4,033	4,021	4,083	4,150	4,648	4,446	4,195	4,072	4,237
Existing Single-Family Sales	3,423	3,327	3,253	3,223	3,215	3,191	3,213	3,250	3,594	3,467	3,307	3,217	3,319
New Single-Family Sales	592	543	551	543	536	528	524	531	676	654	557	530	550
Housing Starts	1,454	1,204	1,128	1,105	1,125	1,137	1,192	1,248	1,491	1,386	1,223	1,175	1,305
Single-Family Units	1,083	895	848	838	844	855	897	928	1,086	1,010	916	881	946
Multi-Family Units	371	309	280	267	281	282	295	320	405	377	307	294	358
2-4 Family Units	43	44	40	38	40	40	42	45	59	55	41	42	51
5+ Family Units	328	265	240	230	241	242	254	275	347	321	266	253	308
Mobile Homes Shipped	196	190	180	181	182	183	188	194	218	199	187	187	198
Percent change - Year Ago													
Total Single-Family Sales	-2.3	-2.5	-7.5	-10.2	-9.8	-4.1	0.2	2.8	0.4	-4.3	-5.6	-2.9	4.1
Existing Single-Family Sales	-3.5	-0.4	-5.5	-8.9	-6.1	-4.1	-1.3	0.8	2.4	-3.6	-4.6	-2.7	3.2
New Single-Family Sales	-5.6	-13.7	-22.9	-18.4	-10.8	-3.3	-0.5	2.8	0.8	-3.3	-14.7	-5.0	3.8
Housing Starts	-0.3	-11.1	-15.6	-18.0	-22.7	-5.6	5.7	12.9	-8.6	-7.0	-11.8	-3.9	11.0
Single-Family Units	0.2	-9.8	-14.7	-15.2	-22.1	-4.4	5.7	10.7	-5.9	-7.0	-9.3	-3.8	7.4
Multi-Family Units	-1.6	-14.7	-18.2	-25.7	-24.4	-8.9	5.5	19.8	-14.9	-7.1	-18.5	-4.0	21.7
2-4 Family Units	-2.7	-18.1	-29.3	-29.2	-8.4	-8.8	5.5	19.8	-10.0	-5.7	-25.9	1.3	21.7
5+ Family Units	-1.4	-14.1	-16.0	-25.1	-26.5	-8.9	5.5	19.8	-15.7	-7.3	-17.2	-4.9	21.7
Median Home Prices													
Thousands of Dollars													
Existing Home Prices	95.9	96.2	97.4	97.4	97.2	97.3	97.9	98.5	89.2	92.9	96.7	97.7	100.3
New Home Prices	123.2	127.6	124.4	125.5	125.7	126.4	127.8	129.2	113.4	120.4	125.2	127.3	131.0
Percent Change - Year Ago													
Existing Home Prices	5.2	3.5	2.6	5.1	1.3	1.1	0.5	1.1	5.0	4.2	4.1	1.0	2.6
New Home Prices	4.4	6.8	4.0	0.9	2.0	-1.0	2.7	2.9	8.3	6.2	4.0	1.7	2.9

Source: Forecast produced using Laurence H. Meyer & Associates' model of the U.S. economy.
Assumptions and simulations by Dr. John Tuccillo and Robert Barr.

The *Real Estate Outlook* features a monthly summary of current economic conditions, an easy-to-read forecast for the economy and real estate, and selected reports on issues affecting the housing industry. In addition, one of the Nation's top real estate economists, Dr. John Tuccillo, gives his commentary on the state of the economy and its implications for real estate markets. If you would like to subscribe to the *Real Estate Outlook*, contact the Forecasting and Policy Analysis Division at (202) 383-1131. The annual subscription fee is $25 for members of the NATIONAL ASSOCIATION OF REALTORS® and $30 for nonmembers.

REALTOR®

EQUAL HOUSING
OPPORTUNITY